

REMARKS

In accordance with the foregoing, claims 2, 4 and 12 have been cancelled and claims 1, 3, 10, 11 and 18 have been amended. Claims 1, 3, 5-11 and 13-18 are pending and under consideration.

Claims 1-18 are provisionally rejected for obviousness type double patenting over claims 1-27 of U.S. Application Serial No. 09/942,735 ("the '735 application"). The rejection is respectfully traversed. The present invention relates to a method for speech synthesis by a grapheme/phoneme conversion, where a subword of a given word is searched in a database and a phonetic transcription is selected from the database for the subword. A further constituent of the given word is phonetically transcribed as a function of the phonetic transcription of the subword. The phonetic transcription of the subword and the phonetic transcription of the further constituent are combined. On the other hand, the '735 application relates to a method for grapheme/phoneme conversion of a word, where the word is decomposed into the subwords and a grapheme/phoneme conversion is performed to obtain transcriptions of the subwords. For the graphemes bordering on an interface between the subwords, grapheme/phoneme conversion is recalculated as a function of the context of the respective interface.

Therefore, the '735 application does not relate to an out-of-vocabulary treatment of a further constituent as a function of the context of the phonetic transcription of the subword. Instead, it relates to grapheme/phoneme conversion of subwords of a word, for example by a database search or an out-of-vocabulary treatment, and subsequently recalculating the grapheme/phoneme conversion for the graphemes at the interface between the subwords as a function of the context of the respective interface.

Claims 1-6, 8-14 and 18 are rejected under 35 USC § 102(b) as being anticipated by U.S. Patent No. 6,076,060 to Lin et al. Claims 7 and 15-17 are separately rejected under 35 USC § 103(a) as being obvious over Lin et al. in view of U.S. Patent No. 5,913,194 to Karaali et al.

Lin et al. discloses a method and apparatus which employ a suffix rule set to match substrings from the end of an input text string to suffix rules, a prefix rule set to match substrings from the beginning of the input text string to prefix rules and an infix rule set to match substrings taken from the middle of the input text or any remaining text not matched by either the suffix or prefix rules. Phonetic data is produced for any portion of the input text that matches a particular rule (see Abstract).

It appears that the Examiner believes that suffixes are registered in the suffix rule set 30 and prefixes are registered in the prefix rule set 31. Referring to column 1, lines 54-60, it is questioned whether a rule set is an equivalent to a dictionary database. It further appears that the Examiner believes that the infix rule set 32 is used for out-of-vocabulary treatment. Infix rule set 32 is described at column 8, lines 15-21.

The Examiner's treatment of the reference is inconsistent. The rule sets 30, 31 and 32 should each be considered a vocabulary database or an out-of-vocabulary processor. It is inconsistent to pick one rule set as a vocabulary database and pick another rule set as an out-of-vocabulary processor. It would be more consistent to argue that all of the rule sets are equivalent to a vocabulary database or to argue that all of the rule sets are equivalent to an out-of-vocabulary processor. However, at least with regard to the out-of-vocabulary processor, the reference is deficient.

The independent claims have been amended to recite that out-of-vocabulary treatment of the further constituent is performed as a function of the phonetic transcription of the subword. This feature, which previously appeared in dependent claim 2, for example, is described on page 2, at paragraph [008] and on page 5 at paragraph [0026] of the application. In Lin et al., when grapheme/phoneme conversion is performed for an infix constituent of a word, Lin et al. does not use information available from the phonetically transcribed preceding prefix or following suffix constituent of the word.

In the Office Action, the Examiner addresses the limitations of claim 2, which have been incorporated into the independent claims, by citing Fig. 3 element 20 of Lin et al. However, element 20 in Fig. 3 is simply a phonemic code string buffer. It is not seen that this buffer has anything to do with performing an out-of-vocabulary treatment as a function of the phonetic transcription of the subword.

Because Lin et al. does not use the phonetic context of the subword, the further constituent will be transcribed with a worse result, because the transcription uses less information than is used according to the invention. A person having ordinary skill in the art would have been confronted with the problem of poor transcription and would have desired better speech synthesis for words composed of subwords and further constituents. Other than the present invention, there is no suggestion for a solution to this problem. The Examiner cites Laraali et al. for the neural network limitations of the dependent claims. However, Laraali et al. does not suggest a solution for the poor transcription problem. The problem may be overcome, according to the invention, by performing out-of-vocabulary treatment to phonetically transcribe

the further constituent, as a function of the phonetic transcription of the subword.

Because the references cited by the Examiner do not disclose or suggest phonetically transcribing a further constituent as a function of the phonetic context, it is submitted that the claims patentably distinguish thereover and the prior art rejections should be withdrawn.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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on Apr. 27, 2005
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Date: 4.27.05